Delfield®

ACR-26S, Air Curtain Refrigerator

Service and Installation Manual

Please read this manual completely before attempting to install this equipment! Notify carrier of damage! Inspect all components immediately.

CAUTION

Important Information
Read Before Use
Please Save These Instructions!

February 2013

Manitowoc

Important Warning And Safety Information

WARNING Read This Manual Thoroughly Before Operating, Installing, Or Performing Maintenance On The Equipment.

WARNING Failure To Follow Instructions In This Manual Can Cause Property Damage, Injury Or Death.

WARNING Do Not Store Or Use Gasoline Or Other Flammable Vapors Or Liquids In The Vicinity Of This Or Any Other Appliance.

WARNING Unless All Cover And Access Panels Are In Place And Properly Secured, Do Not Operate This Equipment.

WARNING This Appliance Is Not Intended For Use By Persons Who Lack Experience Or Knowledge, Unless They Have Been Given Supervision Or Instruction Concerning Use Of The Appliance By A Person Responsible For Their Safety.

WARNING This Appliance Is Not To Be Played With.

WARNING Do Not Clean With Water Jet.

WARNING Do Not Use Electrical Appliances Inside The Food Storage Compartment Of This Appliance.

CAUTION Observe the following:

- Minimum clearances must be maintained from all walls and combustible materials.
- Keep the equipment area free and clear of combustible material.
- Allow adequate clearance for air openings.
- Operate equipment only on the type of electricity indicated on the specification plate.
- Unplug the unit before making any repairs.
- Retain this manual for future reference.

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Receiving and Inspecting the Equipment

Even though most equipment is shipped crated, care should be taken during unloading so the equipment is not damaged while being moved into the building.

1. Visually inspect the exterior of the package an skid or container. Any damage should be noted and reported to the delivering carrier immediately.
2. If damaged, open and inspect the contents with the carrier.
3. In the event that the exterior is not damaged, yet upon opening, there is concealed damage to the equipment notify the carrier. Notification should be made verbally as well as in written form.
4. Request an inspection of the concealed equipment. This should be done within 10 days from receipt of the equipment.
5. Check the lower portion of the unit to be sure legs or casters are not bent.
6. Also open the compressor compartment housing and visually inspect the refrigeration package. Be sure lines are secure and base is still intact.
7. Freight carriers can supply the necessary forms upon request.
8. Retain all crating material until an inspection has been made or waived.

Uncrating the Equipment

First cut and remove the banding from around the crate. Remove the front of the crate material, use of some tools will be required. If the unit is on legs remove the top of the crate as well and lift the unit off the skid. If the unit is on casters it can be "rolled" off the skid.

Serial Number Information

To view the serial number of the ACR-26S refrigerator, open the door of the unit. The serial number is located on the inside back wall in the top left corner of the unit.

Always have the serial number of your unit available when calling for parts or service. A complete list of authorized Delfield parts depots can be found on www.delfield.com.

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Warranty Information

Visit *http://www.delfield.com/minisite/service/warranty_info* to:

- Register your product for warranty.
- Verify warranty information.
- View and download a copy of your warranty.

Regulatory Certifications

All models are certified by:

National Sanitation Foundation (NSF)

Underwriters Laboratories (UL)
Underwriters Laboratories of Canada (ULC)

Specifications

Model ACR-26S									
V/Hz/Ph	Amps	Volume	18"x26" Tray Capacity	H.P.	404A Charge	BTU/Hr Door Closed	BTU/Hr System Cap.	Ship Weight	NEMA Plug
115/60/1	14.0	12.5ft^3	10	1/2	32oz	504	3300	592lbs/ 269kg	5-20P

Installation

Location

The ACR-26S is intended for indoor use only. Be sure the location chosen has a floor strong enough to support the total weight of the cabinet and contents. Reinforce the floor if necessary to provide for maximum loading.

Avoid placing unit under air conditioning vents or other ventilation fans that may affect the air curtain when door is open.

Leveling

A level cabinet looks better and will perform better because the doors will line up with the door frames properly, the cabinet will not be subject to undue strain, and the contents of the cabinet will not move around on the shelves. Use a level to make sure the unit is level from front to back and side to side.

Stabilizing

The ACR-26S is supplied with casters for your convenience, ease of cleaning underneath and for mobility. Two locking casters allow you to stabilize the unit if you are loading or unloading product.

Electrical connection

Refer to the amperage data shown in this manual, the serial tag and your local code or the National Electrical Code for proper wire sizes. All case wiring is labeled with the required voltage-be sure it is connected to the proper power source. A protected circuit of the correct voltage and amperage must be run for connection of the line cord or permanent connection to the unit.

Reversing the door hinging

The following steps will allow you to reverse the side the door hinges on.

1. Open the door to 180° open position.
2. Lift up door and remove door from hinges in fully open position.
3. Remove pins from hinges.
4. Remove both hinges and relocate on the opposite side. Tighten hinges.
5. Unscrew the lock stop tab from the top of door and mount to the bottom in the holes provided.
6. Invert the door and mount it into the hinges in the fully open position.

Operation

When the door is open, Delfield's patented air curtain design directs cold air across the cabinet opening, keeping hot air out and cold air in for two hours at a time. The unit will maintain a maximum of 45°F box temperature at 70°F ambient with the door open during peak production times, quickly returning to a normal 36°F. With the door closed, a maximum 40°F at 100°F ambient is maintained (normal operation) while running only 15% in an 85° room.

Don't pack the interior of the refrigerator so full that air cannot circulate. When operating open, keep shelves filled with trays and trays pushed all the way in so that they do not disrupt the air curtain air flow.

Open the ACR's door completely and the magnetic strip built in to the frame allows the door to remain open while loading or unloading.

The power switch should be turned to the OFF position and the power cord disconnected whenever performing maintenance functions or cleaning the refrigerated cabinet area.

Maintenance

Door Gasket Maintenance
Door gaskets require regular cleaning to prevent mold and mildew build up and also to retain the elasticity of the gasket. Gasket cleaning can be done with the use of warm soapy water. Avoid full strength cleaning products on gaskets as this can cause them to become brittle and crack. Never use sharp tools or knives to scrape or clean the gasket. Gaskets can be easily replaced and do not require the use of tools or an authorized service person. The gaskets are "Dart" style and can be pulled out of the groove in the door and new gaskets can be "pressed" back into place.

Caster Maintenance
Wipe casters with a damp cloth monthly to prevent corrosion.

NOTE **The power switch must be turned to OFF and the unit disconnected from the power source whenever performing service, maintenance functions or cleaning the refrigerated area.**

Refrigerators and Freezers
The interior and exterior can be cleaned using soap and warm water. If this isn't sufficient, try ammonia and water or a nonabrasive liquid cleaner. When cleaning the exterior, always rub with the "grain" of the stainless steel to avoid marring the finish. Do not use an abrasive cleaner because it will scratch the stainless steel and can damage the breaker strips and gaskets.

Stainless Steel Care and Cleaning
To prevent discoloration or rust on stainless steel several important steps need to be taken. First, we need to understand the properties of stainless steel. Stainless steel contains 70- 80% iron, which will rust. It also contains 12-30% chromium, which forms an invisible passive film over the steel's surface, which acts as a shield against corrosion. As long as the protective layer is intact, the metal is still stainless. If the film is broken or contaminated, outside elements can begin to breakdown the steel and begin to form discoloration or rust. Proper cleaning of stainless steel requires soft cloths or plastic scouring pads.

NEVER USE STEEL PADS, WIRE BRUSHES OR SCRAPERS!

Cleaning solutions need to be alkaline based or non-chloride cleaners. Any cleaner containing chlorides will damage the protective film of the stainless steel. Chlorides are also commonly found in hard water, salts, and household and industrial cleaners. If cleaners containing chlorides are used be sure to rinse repeatedly and dry thoroughly. Routine cleaning of stainless steel can be done with soap and water. Extreme stains or grease should be cleaned with a non-abrasive cleaner and plastic scrub pad. Always rub with the grain of the steel. There are stainless steel cleaners available which can restore and preserve the finish of the steels protective layer. Early signs of stainless steel breakdown are small pits and cracks. If this has begun, clean thoroughly and start to apply stainless steel cleaners in attempt to restore the passivity of the steel.

CAUTION **Never use an acid based cleaning solution! Many food products have an acidic content, which can deteriorate the finish. Be sure to clean the stainless steel surfaces of ALL food products. Common items include, tomatoes, peppers and other vegetables.**

Cleaning the Condenser Coil
In order to maintain proper refrigeration performance, the condenser fins must be cleaned of dust, dirt and grease regularly. It is recommended that this be done at least every three months. If conditions are such that the condenser is totally blocked in three months, the frequency of cleaning should be increased. Clean the condenser with a vacuum cleaner or stiff brush. If extremely dirty, a commercially available condenser cleaner may be required.

Failure to maintain a clean condenser coil can initially cause high temperatures and excessive run times. Continuous operation with a dirty or clogged condenser coil can result in compressor failure. Neglecting the condenser coil cleaning procedures will void any warranties associated with the compressor and cost to replace the compressor.

CAUTION **Never use a high-pressure water wash for this cleaning procedure as water can damage the electrical components located near or at the condenser coil.**

Doors/Hinges
Over time and with heavy use doors the hinges may become loose. If this happens tighten the screws that mount the hinge brackets to the frame of the unit. Loose or sagging doors can cause the hinges to pull out of the frame, which may damage both the doors and the hinges. In some cases this may require qualified service agents or maintenance personnel to perform repairs.

Preventing blower coil corrosion
To help prevent corrosion of the blower coil, store all acidic items, such as pickles and tomatoes, in sealable containers. Immediately wipe up all spills.

Continuous opening and closing of the doors will hamper the unit's ability to maintain optimum refrigeration temperature. Top section is not intended for overnight storage.

Over shelves and other items mounted to the top of the counters should never be installed in the field due to the potential damage to the refrigeration system.

ERC2 Control Instructions

Programming

The ERC 2 control initially powers up displaying 12:00 AM otherwise it will show the last configured selection (time or temperature). If a power outage occurs during normal operation, the control will maintain the correct time-of-day using a capacitor (batteries not required). The time will be maintained for up to 100 hours when the capacitor is fully charged,

To initiate a **Manual Defrost**, press and hold the MAN DEF key for 3 seconds.

There are two levels of programming in the ERC 2. The first level of security will enable the user to set two parameters: Time-of-day (**CLoC**) and Setpoint temperature (**SEt**). The other level allows access to the other parameters.

Three buttons are used for the programming: SET, UP and DOWN

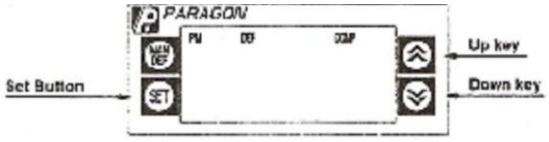


Fig. 2 – Display Lay-out

Follow these steps to change <u>time-of-day</u> and <u>setpoint</u> temperature (First Level):

Step 1	SET	Press and hold set for 5 seconds. The display will show **CLoC**
Step 2	SET	Press SET again to change time-of day
Step 3	⌃ or ⌄	Press UP or DOWN until the correct time-of-day is displayed
Step 4	SET	Press SET to accept the new time
Step 5	⌄	Press DOWN to go to the next parameter – Setpoint temperature – **SEt** (cut out)
Step 6	SET	Press SET to change the setpoint temperature
Step 7	⌃ or ⌄	Press UP or DOWN to go to the desired setpoint. The range is -40 to 60°F or -40 to 16°C. ACR-26S is set at 34-35°F or 1-2°C
Step 8	SET	Press SET to accept the change
Step 9	⌄	Press DOWN to exit the first level of programming.

<u>Note 1</u>: During programming, if no button is pushed during 30 seconds, the control will go back to the normal operating mode. This is valid for both programming levels.

<u>Note 2</u>: When changing the time, press and hold the MAN DEF button for 3 seconds to change the AM/PM mode.

ERC2 Control Instructions, continued

To change the other parameters (Second Level) follow these steps:

Step 1	SET and ⌄⌄	Press and hold SET and DOWN for 10 seconds. The display will show dSPL
Step 2	SET	Press SET to change the parameter
Step 3	⌃⌃ or ⌄⌄	Press UP or DOWN to change the options, time or temperature for the current parameter
Step 4	SET	Press SET to accept the new value
Step 5	⌄⌄	Press DOWN to go to the next parameter. Then go back to Step 2. After the last parameter is displayed (ALHi), the display will go back to the normal operating condition

Note : to scroll down the parameters without changing them, press the DOWN button.

List of Parameters

Here is a list of the parameters that can be changed in the Second Level of programming, as well as their options and ranges.

Parameter	Display Symbol	Description	Range/Options	Delfield Settings
Display Status	dSPL	Information shown on the display during operating conditions	tDAy – time-of-day rSP° - Zone temperature (refrigerated space) CyCL– cycle between time and zone temperature Epr° - evaporator coil temperature	rSP°
Clock Format	CLHr	Format of the time (12 or 24 hours mode)	12Hr – AM/PM format 24Hr – 24 hour format	12Hr
Temperature Format	°dSP	Temperature degrees	°F – degrees Fahrenheit °C – degrees Celsius	° F
Defrost Type	dFtP	Type of defrost used in the application	ELEC– electric heater defrost/off cycle HgAS– hot gas	ELEC
Fan Status During Defrost	EFAN	Enable or not the evaporator fan during defrost	no – fan is turned off during defrost yES– fan remains on during defrost	yES
	CFAN	Enable or not the condenser fan during defrost	no – fan is turned off during defrost yES– fan remains on during defrost	no

ERC2 Control Instructions, continued

Defrost Interval	dFin	Type of defrost interval	TdAy – time-of-day setpoint CPrn – compressor run time tdEF – temperature initiated defrost	tdEF
Minimum Compressor Off Time	CoFF	Minimum time that the compressor will remain turned off	Range: from 0 to 15 min	0
Minimum Compressor On Time	Con	Minimum time that the compressor will remain turned on	Range: from 0 to 15 min	0
Alarm Delay	ALrd	Time delay before the alarm goes off after the temperature fall off the two alarm setpoints	Range: from 0 to 59 min	30
Compressor Run Time	CPrn	Time the compressor will run between defrosts		
Number of Defrosts	nodF	Number of defrosts per day	From 0 to 8 (0 means 1 defrost every 28 hours)	4
Defrost Start Time	dEF1-8	Start time of each defrost		
Defrost Duration	DEFd	Defrost duration time (back-up for defrost termination temperature)	Range: from 0 min to 4 hours	45
Fan Delay	FAnd	Delay time for the fan after defrost(back-up for fan cut-in temperature)	Range: from 0 to 59 min	0
Pump Down	Pudn	Pump down duration	Range: from 0 to 59 min	0
Drip Time	driP	Drip time duration	Range: from 0 to 59 min	0
Setpoint Differential	diF°	Cut-in temperature differential Note: cut-in is cut-out plus differential	Range: from 1 to 25	3
Defrost Initiated Temperature	tdEF	Temperature that will initiate a defrost cycle	Range: from -40 to 40°F or -40 to 4°C	10°F
Defrost Termination Temperature	dEF°	Temperature in the evaporator that will terminate the defrost cycle	Range: from 0 to 75 °F or -18 to 25 °C	45°F
Fan Cut-In Temperature	FAn°	Temperature in the evaporator that will turn the fan on after defrost	Range: from -40 to 60°F or -40 to 23 °C	30°F
Low Temperature Alarm	ALLo	Low temperature setpoint that will make the alarm do off and the error message appear on the display	Range: from -40 to 60°F or -40 to 23 °C	25°F

ERC2 Control Instructions, continued

High Temperature Alarm	ALHi	High temperature setpoint that will make the alarm do off and the error message appear on the display	Range: from -40 to 60°F or -40 to 23°C	60°F

Important note: To change from degrees C to F or vice-versa, the user must reprogram all the parameters that are related to the temperature. The unit does not convert parameters automatically from degrees F to C or vice-versa.

Example 1 – To adjust the time-of-day

- Press and hold SET for 5 seconds
- Press SET again
- Press Up or DOWN until the correct time appears on the display
- Press SET to accept the new time
- Press DOWN twice to exit the programming mode

Example 2 – To set one defrost a day, at 11:59 PM

- Press and hold SET and DOWN for 10 seconds
- Press DOWN five times to get to the Defrost Interval (dFin)
- Press SET to change the parameter
- Press DOWN until tdAy appears on the display
- Press SET to accept the option
- Press DOWN seven times to go to the Number of Defrosts (noDF)
- Press SET to change it
- Press UP or DOWN until 1 appears on the display
- Press SET to accept the change
- Press DOWN to go to Defrost Start Time (dEF1)
- Press SET to change the time
- Press UP or DOWN until the 11:59 PM appears on the display
- Press SET
- Press DOWN ten times to exit the programming level

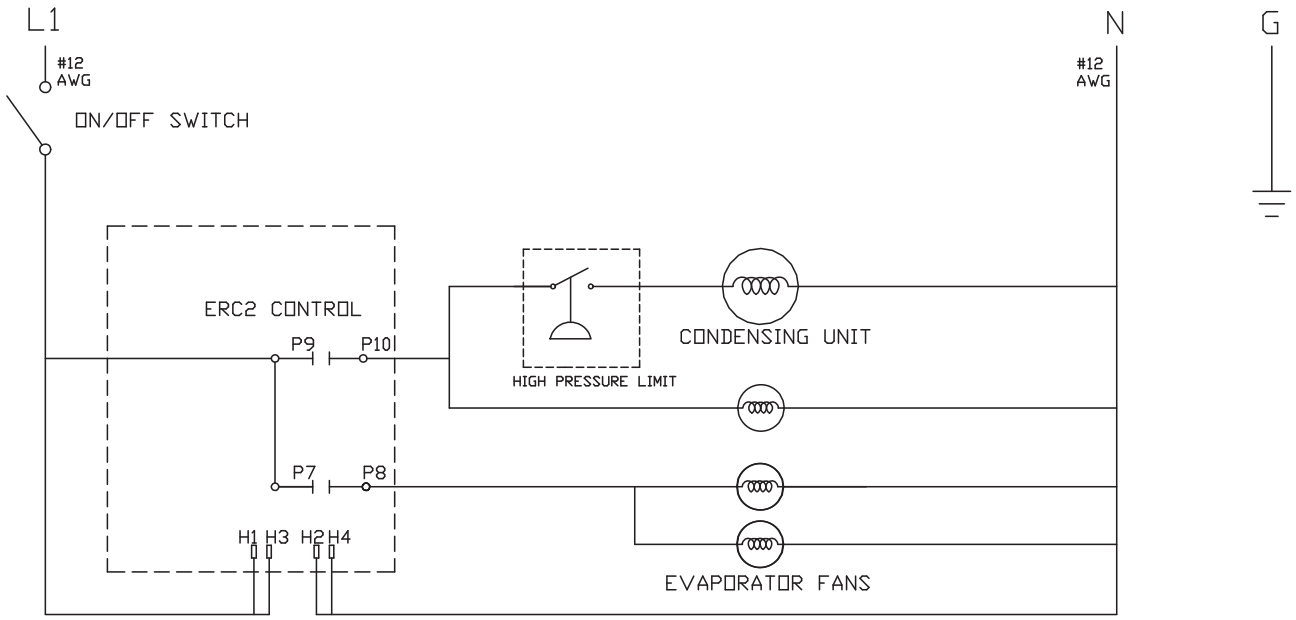
ERC2 Control Instructions, continued

Error Codes

Display	Control Status
Er 1	ERC Fault – software or hardware failure
Er 2	ERC Communication Fault – indicates that there is a problem with the display module cable
Er 3	Zone Sensor Fault – indicates an open or shorted temperature sensor
Er 4	Evaporator Sensor Fault – indicates an open or shorted evaporator sensor
Er 5	ERC Fault – software or hardware failure
Er 6	Low Temperature Alarm – indicates that the temperature has dropped below the low alarm setpoint
Er 7	High Temperature Alarm – indicates that the temperature has gone above the high alarm setpoint

For Error Codes 1, 2 and 5 cut the power to the unit and correct the problem to reset the display.
For Codes 3 and 4, press the UP or DOWN button on the display to reset the error message. If the display still shows the message, the sensor must be replaced.
The Error Codes 6 and 7 will be automatically reset once the temperature is back within the two setpoints.

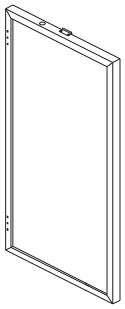
ACR-26S Wiring Diagram



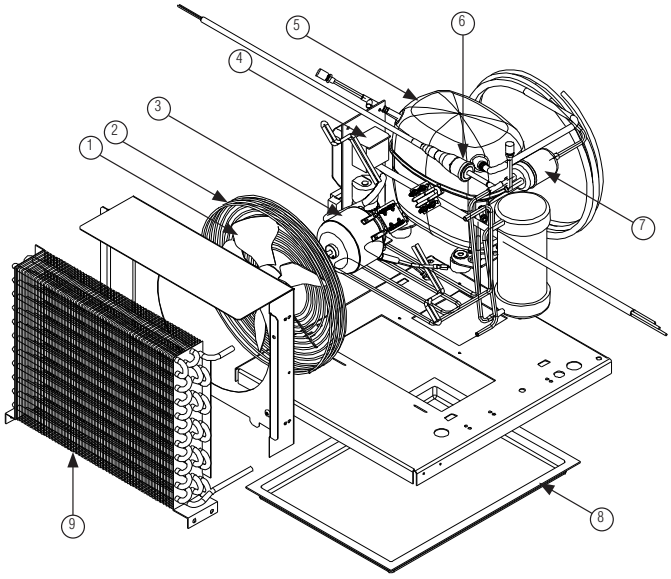
For customer service, call (800) 733-8829 or (800) 733-8948, Fax (989) 773-3210, www.delfield.com

Replacement Parts

3234221	Caster, 4, Plt, Swvl, Brk
3516085	Coil, Evap, 9x17, Acr-26s
2195005	Control, Electronic, ERC2, Refg
2183348	Cord/Plug Assembly, 16/3 Nema 5-15
2162687	Motor/fan/shroud Assy, 8", 115V
265-696-0003	Pan, Drip, Coil, ACR-26S
2194577	Probe, ERC2 Control
2190154	Switch, Rocker, 20A/125V
3516084	Valve, Exp, 1/2Ton, R-404A



000-187-0040	**Door Assembly, ACR-26S, RT**
1701147	Gasket, Dr, 45.50x23.81
000-BJ4-0030	Hinge Assy, Door, ACR-26S, RT



	000-BN5-0035	**Condenser, Assembly, 1/2hp**
1	3516554	Blade, Fan, 9.00in,
2	2160019	Guard, Fan, Wire
3	2162716	Motor, Fan, 16w, 115v,cw
4	3516462	Capacitor, Start-run
5	3527026	Comp, Sc12mlx, 115/60 Hz
6	3516331	Switch, High Pressure
7	3516322	Drier, Filter, (2)inlet
8	039-231-0031	Pan, Condensate, Large
9	3516455	Coil, Cond., 1/2 Hp

Notes

Notes

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Mt. Pleasant, MI

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Thank you for choosing Delfield!

Help is a phone call away. Help our team of professional, courteous customer service reps by having your model number and serial number available at the time of your call (800) 733-8829.

Model: _____ S/N: _____

Installation Date: _____

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SERVICE AND PARTS

For a list of Delfield's authorized parts depots, visit our website at www.delfield.com

Register your Delfield warranty online. Go to www.delfield.com under the service tab to complete.

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